

Atty Dkt. No.: 10020333-1  
USSN: 10/086,658

IN THE CLAIMS

1. (currently amended) A method for reliably acquiring emitted-light intensity from the surface of a molecular array, the method comprising:
  - providing a probe-molecule excitation system;
  - providing an emitted-light photodetection system ~~that produces an analog signal representative of the emitted-light intensity;~~
  - producing an analog signal by detecting light emitted from the surface of the molecular array;
  - adding a signal offset to the analog signal;
  - digitizing the analog signal to produce a digital signal;
  - subtracting a portion of the signal offset from the digital signal; and
  - integrating the digital signal to produce integrated digital signals that are each associated with a pixel in an image of the molecular array.
2. (original) The method of claim 1 wherein the photodetection system outputs an analog current signal that is converted to an analog voltage signal.
3. (previously presented) The method of claim 1 further including:
  - prior to detecting light emitted from the surface of the molecular array, carrying out a dark scan with no molecular array in order to determine a mean intensity and standard deviation for background generated by the photodetection system.
4. (original) The method of claim 3 wherein the portion of the signal offset subtracted from the digital signal is the signal offset minus four times the standard deviation of the background.
5. (previously presented) Integrated digital signals produced by the method of claim 1 encoded by:
  - storing representations of the signal intensity data in a machine readable medium;
  - transmitting representations of the signal intensity data over an electronic communications medium;
  - displaying the signal intensity data on display device; and

Atty Dkt. No.: 10020333-1  
USSN: 10/086,658

printing representations of the signal intensity data in a human readable medium.

6. (original) A set of computer instructions for carrying out the method of claim 1 encoded by one of:

storing the computer instructions in a machine readable medium;  
transmitting the computer instructions over an electronic communications medium; and  
printing the computer instructions in a human readable medium.

Claims 7-17 (cancelled)

18. (previously presented) A molecular array scanner comprising:  
a probe-molecule excitation system;  
an emitted-light photodetection system that produces an analog signal representative of the emitted-light intensity;  
a signal-offset adder that adds an offset to the analog signal;  
an analog-to-digital converter that digitizes the analog signal to produce a digital signal;  
signal-offset-subtractor logic that subtracts a portion of the signal offset from the digital signal; and  
a digital-signal integrator that integrates portions of the digital signal to produce integrated digital signals that are each associated with a pixel in a scanned image of the molecular array.
19. (previously presented) The molecular array scanner of claim 18 further including:  
a memory component that stores a value that allows for calculation of the portion of the signal offset subtracted by the signal-offset-subtractor logic.
20. (previously presented) The molecular array scanner of claim 19 further including:  
dark scan logic that controls the molecular array scanner to carry out a dark scan with no molecular array in order to determine a mean intensity and standard deviation for background generated by components within the photodetection and the signal processing systems of the molecular array scanner prior to scanning a molecular array to acquire data.

Atty Dkt. No.: 10020333-1  
USSN: 10/086,658

21. (previously presented) The molecular array scanner of claim 20 wherein the dark scan logic wherein the portion of the signal offset subtracted by the signal-offset-subtractor logic is the signal offset minus four times the standard deviation for the background.

22. (previously presented) Integrated digital signals produced by the molecular array scanner of claim 18 encoded by:

- storing representations of the signal intensity data in a machine readable medium;
- transmitting representations of the signal intensity data over an electronic communications medium;
- displaying the signal intensity data on display device; and
- printing representations of the signal intensity data in a human readable medium.

Claims 23-27 (cancelled).